

## ABSTRACT OF THE DISCLOSURE

MULTIPHASE CLOCK RECOVERY USING D-TYPE PHASE DETECTOR

A method of extracting a clock signal from a data stream, by generating a plurality of multiphase clock signals, selecting one of the multiphase signals based on synchronization states identifying which of the multiphase clock signals is most closely aligned with the data stream, and sampling the data stream using the selected multiphase signal to produce a retimed data signal. The multiphase clock signals may be subharmonics of the data stream. The selecting step may include the determination of whether the multiphase clock signals are either early or late with respect to the data stream, particularly using D-type flip-flops. The synchronization states are used to define which of the rising edges of the multiphase clock signals is most closely aligned with an edge of the data stream. A multiphase voltage-controlled oscillator may be used to provide the multiphase clock signals. An error signal is created using the multiphase clock signals and the data stream which is applied to a charge pump, and the multiphase clock signals are corrected using a control voltage output of the charge pump.

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